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計画9-2 The adaptive significance of
geophagy in food-enhanced free-ranging
Japanese Macaques at Arachiyam, Japan(V
共同利用研究 2.研究成果)

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計画 9-1

ニホンザル新生児における採食行動の発達 上野有理 (京都大・理・霊長類)

本研究は新生児における採食行動の発達という視点から、ニホンザルにおいて食物選択が学習される過程について検討することを目的とする。霊長類における食物選択の学習には社会的学習と個々の経験による学習の両者が関連してはたらくとされている。なかでも、他個体と近接してともに採食することは、モデル個体と同じ食物を味わう機会につながり、ひいては食物選択における均一性をもたらすことになると考えられている。そこで特に採食個体との近接性に着目し、ニホンザル新生児において「伴食による食物選択の均一化」がおこる可能性について検討した。調査地は京都岩田山自然遊園、対象は嵐山 E 群出生の 0 歳児雌 2 個体と 1 歳児雌 2 個体である。観察期間は 1999 年 5 月から 12 月で、各個体 1 週間から 1 ヶ月間隔で観察をおこなった。方法としては終日個体追跡法をもちい、逐次記録法とスキャン・サンプリングを併用して他個体との近接性と行動の記録をおこなった。結果として、1) 0 歳児の活動性・近接性は生後 3 ヶ月までに急激に変化する 2) 近接個体が採食していると、新生児も同時に採食している傾向が強く、その傾向は生後 1 ヶ月齢からすでにみられる 3) 伴食相手との品目の一致度は生後 1、2 ヶ月齢では低く、発達にともない増加することが明らかになった。本研究でえられた結果は、ニホンザル新生児において「伴食による食物選択の均一化」がおこる可能性を示唆するものであった。

計画 9-2

The adaptive significance of geophagy in food-enhanced free-ranging Japanese Macaques at Arashiyama, Japan.

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A study was done on Japanese macaques at Arashiyama, to determine the quantities and quality of foods and soils habitually ingested by them. Behavioural observations spanned one year from April 1998 to June 1999 on eight adult female individuals, using a focal sampling method. A sample of their foods was chemically analysed for nutritional contents and phytotoxicity. The eaten soils were analysed for particle size, organic content, mineralogy, geochemistry and their adsorptive affinity to representative plant alkaloids and tannins. The monkeys ingested soils at a high rate of 2.97g/indiv./day (wet weight), with elevated intakes (64.4% of all cases) in the afternoon. Their food was dominated (66.3% wet weight) by provisioned items, foods which were found to be extremely rich in proteins and soluble carbohydrates. On the converse, the breadth and amount of the eaten wild foods was very low, although consumption of their specific plant parts showed clear seasonality. The ingested soils were generally poor in mineral elements (especially sodium); and elemental concentrations between eaten and uneaten soils were not apparent. Additional tests indicated that the bioavailability likelihood of these elements, if the soils were ingested, was also very low. However, the ingested soils were rich in clay minerals; especially kaolinite. They were also capable of detoxifying plant alkaloids quite well but their affinity to bind to plant tannins was poor. Data on amount, composition, and rate of ingestion of foods and soils by macaques at this site indicate that they might be especially benefiting from the kaolinite in the soils. Kaolinite has a proven capacity to buffer food induced and other gastric upsets. In future, chemical analyses on a broader spectrum of their foods together with *in vivo* experiments on the eaten soils for their detoxification and/or gut anti-acidosis function will be useful to supplement the results of this work.

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